

Rec'd PCT/PTO 22 JUL 2004

502,300  
(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
31 July 2003 (31.07.2003)

PCT

(10) International Publication Number  
**WO 03/062804 A1**

(51) International Patent Classification<sup>7</sup>: **G01N 21/85**

(21) International Application Number: **PCT/ZA03/00011**

(22) International Filing Date: 22 January 2003 (22.01.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

2002/0578	23 January 2002 (23.01.2002)	ZA
2002/0579	23 January 2002 (23.01.2002)	ZA
2002/5000	21 June 2002 (21.06.2002)	ZA

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant and

(72) Inventor: DU PLESSIS, Francois, Eberhard [ZA/ZA];  
No. 7 Penny Lane, Paradyskloof, 7600 Stellenbosch (ZA).

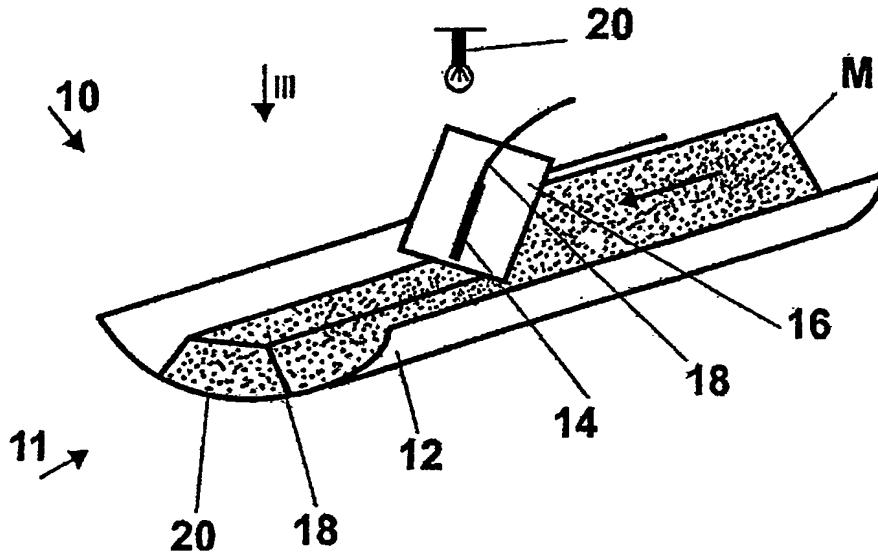
(74) Agent: BACON, Brian; Brian Bacon & Associates, 2nd floor, Mariendahl House, Fedsure on Main, Main Road, 7700 Newlands (ZA).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SPECTRAL ANALYSIS APPARATUS FOR MEASURING INTERMEDIATE LAYERS OF MINERAL SAMPLERS



A1  
**WO 03/062804 A1**

(57) Abstract: A method of spectral analysis of a mineral (M) in granular form is disclosed. The mineral (M) is moved through an illumination zone (18) and a beam of light is directed at the mineral (M) to illuminate it. Light reflected off the mineral (M) is collected and then spectrally analysed to obtain information pertaining to the composition of the granular material (M). The mineral (M) is in the form of a layer having an undersurface (20) and a top surface (22). The illumination zone (18) is intermediate the undersurface (20) and the top surface (22).